REMARKS

Reconsideration of the application is requested in view of the remarks below. Claims 1-7, are pending in the Application.

Claims 1-7 stand rejected under 35 USC 103(a) as unpatentable over Breckwoldt in view of Reibert et al. The rejection should be withdrawn in view of the comments below.

Applicants' invention is related to a process for preparing alkylhydroxyalkyl cellulose comprising the steps of:

a) alkalizing cellulose with an aqueous caustic solution containing from 1.5 to 5.5 equivalents of alkali metal hydroxide per anhydroglucose unit (AGU) of said cellulose, in the presence of a suspension agent which contains alkyl halide in the amount of from (equivalents of alkali metal hydroxide per AGU minus 1.4) to (equivalents of alkali metal hydroxide per AGU plus 0.8);

b) reacting the alkalised cellulose of step a) with one or more alkylene oxides at a temperature higher than 65°C;

c) adding alkyl halide, to the product of step b), in an amount of at least the difference between (i) the equivalents of alkyl halide per AGU in step a) and (ii) the equivalents of alkali metal hydroxide added per AGU in step a), provided that the amount of additionally added alkyl halide is at least 0.2 equivalents per AGU;

d) isolating alkylhydroxyalkyl cellulose from the reaction mixture of step c); and

e) optionally purifying the isolated alkylhydroxyalkyl cellulose.

The Office Action alleges that it would have been obvious to one of ordinary skill in the art at the time the invention was made to include in the process for preparing methylhydroxypropyl cellulose of the Breckwoldt procedure that involves

the alkalization of cellulose in the presence of an alkali halide in vie of the recognition in the art, as suggested by the Reibert et al patent, and the presense of an alkali halide in the alkalization procedure enhances the gel strength of the cellulose ether (Office Action, page 2, para 5, line11 to page 3, line 4).

It is well established that to establish a *prima facie* case of obviousness, the USPTO must satisfy all of the following requirements. First, the prior art relied upon, coupled with the knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or to combine references. *In re Fine*, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). Second, the proposed modification must have had a reasonable expectation of success, as determined from the vantage point of one of ordinary skill in the art at the time the invention was made. *Amgen v. Chugai Pharmaceutical Co.* 18 USPQ 2d 1016, 1023 (Fed Cir, 1991), *cert. denied* 502 U.S. 856 (1991). Third, the prior art reference or combination of references must teach or suggest all of the limitations of the claims. *In re Wilson*, 165 USPQ 494, 496, (CCPA 1970). The Office Action did not establish a prima facie case of obviousness.

Regarding Reibert et al, Reibert et al teaches a two-stage process for the production of methylhydroxypropyl cellulose:

1. cellulose is alkalized and then reacted with a methylating agent, and
2. after which it is realkalized and then once again reacted with a methylating agent.

In the first step at least such a quantity of alkali metal hydroxide is added that corresponds to 20% of the total quantity and a quantity of methylating agent is added that produces at least 20% of the total level of methoxy substitution. In the second step, at least such a quantity of alkali metal hydroxide is added that corresponds to 40% of the total quantity and such a quantity of methylating agent is added that produces at least 40% of the total level of methoxy substitution. Thus, Reibert et al teaches adding in each reaction step equivalent quantities of sodium hydroxide and a methylating agent to the cellulose to produce a methyl cellulose.

The two-stage process of Reibert et al is exemplified by the quantities

disclosed in the examples. Reibert et al teaches equimolar quantities of sodium hydroxide and a methylating agent are added to the cellulose. As a result, a methyl cellulose is produced. However, there is no teaching or suggestion of producing methylhydroxyalkyl celluloses using ethylene oxide, propylene oxide or butylene oxide and no examples are provided.

Regarding Breckwoldt, Breckwoldt teaches the production of highly substituted MHPC by producing an alkali metal cellulose by reacting cellulose with sodium hydroxide and reacting the alkali metal cellulose with a hydroxypropylating reagent, optionally adding additional sodium hydroxide after the hydroxypropylation and conducting methylation by adding a methylating agent after hydroxypropylation. Breckwoldt discloses that the hydroxypropylation and methylation steps are completely separate. At the same time Breckwoldt describes the production of highly substituted MHPC by adding a second quantity of sodium hydroxide. Breckwoldt does for example provide a comparative example in which the presence of methyl chloride leads to undesirably low yields of a hydroxypropylating reagent. Thus, according to the teaching of Breckwoldt, one skilled in the art would expect a high yield of a hydroxyalkylating reagent (in particular a hydroxypropylating reagent) if the etherification/hydroxyalkylation in the absence of methylating agents was practiticed.

Surprisingly the process according to Applicants' invention does however provide advantages with regard to the reagent yields and the short reaction time and flexibility concerning the type of substitution and the degree of substitution. Applicants' process produces the alkali metal cellulose in one step (in contrast to Reibert et al.) and uses the methylating agent at the same time as the hydroxypropylation phase (in contrast to Breckwoldt). In contrast to the Reibert et al. process, this methylating agent is initially used in a substoichiometric quantity and then in a higher than stoichiometric quantity.

Thus, a combination of the teachings of Breckwoldt and Reibert et al. would result in multi-stage alkalization, since Breckwoldt also describes multi-stage alkalization and provides examples thereof. The process according Applicants' invention is however carried out in a single step. Accordingly, neither, Breckwoldt nor Reibert el al, either alone or in combination teach or suggest all the limitations of

Applicants' invention.

In view of the foregoing remarks, allowance of the pending claims is earnestly requested.

Respectfully submitted,

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